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EXAMINER

OJINI, EZIAMARA ANTHONY

ART UNIT PAPER NUMBER

3723

DATE MAILED: 05/07/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/743,502

Applicant(s)

HORIGUCHI ET AL.

Examiner

Anthony Ojini

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8-17,20-23,27 and 28 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

- 6) ☒ Claim(s) 1,2,5,6,8-17,20-23,27 and 28 is/are rejected.

- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.

- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some \* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)

- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

- 5) ☐ Notice of Informal Patent Application (PTO-152)

- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

Applicant's election of group I in Paper No. 8 is acknowledged.

#### *Specification*

The disclosure is objected to because of the following informalities:

On page 29, line 2, please change the character "11b" to ----**111b**----

on page 60, lines 2-4, reference characters "**901**" and "**902**" have both been used to designate **lower surface plate**; and

on page 60, lines 3-6 reference character "**902**" has been used to designate both **lower surface plate** and **upper surface plate**.

Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112*

Claim 2,5,6,8,9,12-17,20,23,27,28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**In claim 2**, line 3, the term "or" is unclear.

**In claim 5**, the method claims must positively recite each step involved in the double side polishing method;

in line 3, is the phrase "automatically rotating" being claimed?

in line 4, is the phrase " holding works" being claimed?

in lines 4,5, is the phrase "to simultaneously polish both surface" being claimed?

in line 6, is the phrase "merging each work" being claimed?

in line 8, is the phrase "supplying the work merged with the carrier" being claimed?

in line 11, is the phrase "aligning the carrier" being claimed?

in lines 12,13, is the phrase "aligning the work before merging it with the carrier" being claimed? and

in line 14, is the phrase "conveying the aligned work into the aligned carrier" being claimed?

**In claim 6**, lines 2-4, is the expression "ejecting the work polished on the lower surface plate to an exterior of the polishing apparatus main body while remaining merged with the carrier" being claimed?

**In claim 8**, line 14, the term "the lower fluid nozzles" lacks antecedent basis.

**In claim 10**, the method claims must positively recite each step involved in the double side polishing method; and

in line 2, is the phrase "automatically rotating" being claimed?

**In claim 12**, the method claims must positively recite each step involved in the double side polishing method;

in line 3, is the phrase "rotating a plurality of carriers" being claimed?

in lines 4,5, is the phrase "to simultaneously polish both surfaces of a plurality of works" being claimed?

in lines 7,8, is the phrase "auto rotating between the upper and lower rotary surface plates" being claimed?

in lines 8,9, is the phrase "processing polishing cloths installed on opposite surfaces of the upper and lower rotary surface plates" being claimed? and

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in line 10, is the phrase "supplying the plurality of processing bodies" being claimed?

**In claim 14**, lines 2-4, is the expression " supplying unpolished works between the upper and lower rotary surface plates and ejecting polished works from between the upper and lower rotary surface plates" being claimed?

**In claim 15**, the method claims must positively recite each step involved in the double side polishing method;

and in line 10, the term "them" is unclear.

**In claim 22**, lines 3-6, is the expression " arranging the plurality of carriers holding the wafers between the upper and lower rotary surface plates at predetermined intervals in the rotation direction and engaging each carrier with a sun gear located in the center of the surface plate and inner gears located in a periphery thereof" being claimed?

and lines 8,9, is the phrase "supplying grinding liquid between upper and lower rotary surface plates" being claimed?

**In claim 23**, line 2, is the phrase "wherein the upper rotary plate is rotationally driven independently of the lower rotary surface plate" being claimed?

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,5,6,10-17,20-23,27,28, as well as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto.

**With respect to claim 1**, Hashimoto discloses a double sided polishing method for at least automatically rotating a plurality of carrier (7) holding workpiece (w) to be polished between an upper and lower rotary surface plates (2,3) to simultaneously polish both surfaces of a plurality of workpiece held by the carriers, comprising the following steps: merging each workpiece with the carrier before supplying the workpiece onto the lower surface plate (see fig. 1); and supplying the workpiece merged with the carrier, onto the lower surface plate in a merged state (see fig. 1), wherein when the work merged with the carrier is supplied to the lower surface plate, an indexing operation of rotating the lower surface plate through a predetermined angle for each operation is preformed to supply the workpiece and carrier to a specified position of the workpiece and the carrier, and wherein the operation of indexing the lower surface is performed so as not to cause carriers already placed on the lower surface plate to move relative to the lower surface plate (see col. 4, line 37 thru col. 5, line 30 & fig. 1).

**With respect to claim 2**, Hashimoto discloses wherein a polished workpiece is ejected from the lower surface separately from the carrier (see col. 5, lines 11-18 & figure 1).

**With respect to claims 5, 6,10-17,20-23,27,28**, Hashimoto discloses a double-sided polishing method using for a double side polishing apparatus (see col. 4, line 39 thru col. 5, line17 & figures 1.2).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8, as well as understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto in view of Kato et al.

**With respect to claim 8**, Hashimoto discloses a double sided polishing method for at least automatically rotating a plurality of carrier (7) holding workpiece (w) to be polished between an upper and lower rotary surface plates (2,3) to simultaneously polish both surfaces of a plurality of workpiece held by the carriers but fail to disclose step of providing a plurality of fluid nozzles in the lower rotary surface plate opposite to the plurality of workpiece between the rotary surface plates, the nozzles being opened in a surface of the surface plate, and on separating the upper and lower rotary surface plates from each other after double side polishing has been completed between the upper and lower rotary surface plates; and step of causing the nozzles to suck the plurality of workpiece in order to hold the workpiece on the lower rotary surface plate. Kato et al. disclose a method of surface grinding a workpiece comprising the step of providing a vacuum unit 58 through a suction tube 56 connected to a lower rotary surface plate 48 and step of causing the vacuum unit to suck a workpiece in order to hold the workpiece on the lower rotary surface plate (see figs. 8, 9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Hashimoto with a step of providing a vacuum unit through a suction tube connected to a lower rotary surface plate and step of causing the vacuum unit to suck a workpiece onto the surface of the plate in view of Kato et al. so as to hold the workpiece on the lower rotary surface plate while polishing the surface of the workpiece.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto in view of Kato et al. as applied to claim 8 above, and further in view of Kitajima et al.

**With respect to claim 9**, Hashimoto fails to disclose a step of providing a plurality of fluid nozzles in the upper rotary surface plate.

Kitajima et al. disclose a step of providing a plurality of fluid nozzles (36) in the upper surface plate (26).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Hashimoto with a step of providing a plurality of fluid nozzles in the upper rotary surface plate in view of Kitajima et al so as to evenly distribute slurry onto the surface of the workpiece.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hisatomi et al., Desai et al., Masumura et al., Duescher, Ikeda et



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al., Minami, Malkin et al., Inada, Herrman et al., Ohmori et al., and Suzuki et al. disclose a double side polishing method respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7.30 to 5.00 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 3590 for regular communications and 703 746 3277 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1148.



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ao  
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